

=> d his full

(FILE 'HOME' ENTERED AT 15:36:19 ON 24 JUN 2005)

FILE 'HCAPLUS' ENTERED AT 15:36:33 ON 24 JUN 2005

L1 1 SEA ABB=ON PLU=ON (US20040087785 OR US6812358 OR US2003000433  
3)/PN OR US2001-296999#/AP,PRN

FILE 'REGISTRY' ENTERED AT 15:38:13 ON 24 JUN 2005

FILE 'HCAPLUS' ENTERED AT 15:38:16 ON 24 JUN 2005

L2 TRA L1 1- RN : 29 TERMS

FILE 'REGISTRY' ENTERED AT 15:38:16 ON 24 JUN 2005

L3 29 SEA ABB=ON PLU=ON L2

FILE 'WPIX' ENTERED AT 15:38:19 ON 24 JUN 2005

L4 1 SEA ABB=ON PLU=ON (US20040087785 OR US6812358 OR US2003000433  
3)/PN OR US2001-296999#/AP,PRN

=> b hcap

FILE 'HCAPLUS' ENTERED AT 15:38:40 ON 24 JUN 2005

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FILE COVERS 1907 - 24 Jun 2005 VOL 143 ISS 1

FILE LAST UPDATED: 23 Jun 2005 (20050623/ED)

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d all l1 tot

L1 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2002:964483 HCAPLUS

DN 138:24878

ED Entered STN: 20 Dec 2002

TI Process for preparing estra-4,9(10)-diene-3,17-dione steroids from  
19-nor-androst-4-ene-3-one steroids

IN Van Rheenen, Verlan H.; Hessler, Edward J.

PA Bridge Organics Co., USA

SO PCT Int. Appl., 23 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C12N

CC 32-3 (Steroids)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002101014	A2	20021219	WO 2002-US18305	20020607 <--
	WO 2002101014	A3	20040325		

Search done by Noble Jarrell

WO 2002101014 B1 20040506

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2003004333 A1 20030102 US 2002-163727 20020606 &lt;--

US 6812358 B2 20041102

US 2004087785 A1 20040506 US 2003-695122 20031028 &lt;--

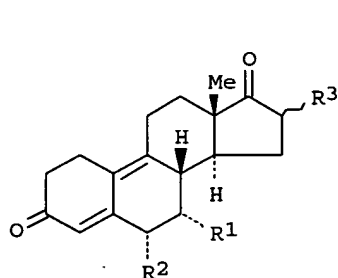
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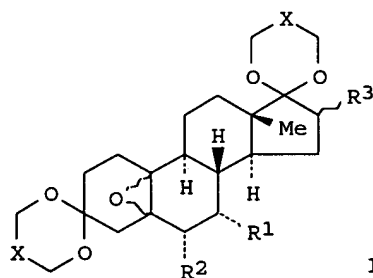
## CLASS

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WO 2002101014	ICM	C12N	
WO 2002101014	ECLA	C07J001/00C2; C07J071/00B1	<--
US 2003004333	NCL	552/623.000; 540/543.000	
	ECLA	C07J001/00C2; C07J071/00B1	<--
US 2004087785	NCL	540/008.000; 540/076.000	
	ECLA	C07J001/00C2; C07J071/00B1	<--
OS CASREACT 138:24878; MARPAT 138:24878			

GI



I



II

AB The present invention discloses a novel process for preparing estra-4,9(10)-diene-3,17-dione derivs. such as I [R1 = Me, H, CO2Me; R2 = Me, F, H; R3 = Me, OH, F, H], from readily available 19-nor-androst-4-ene-3-one derivs. such as II [X = bond, C(Me)2, CH2], by a three-step process. Thus, epoxidn. of 7 $\alpha$ -methyl-estra-5(10)-ene-3,17-dione-3,17-bis-ethylene glycol ketal afforded 7 $\alpha$ -methyl-estra-5(10)-oxido-3,17-dione-3,17-bis-ethylene glycol ketal which upon treatment with hydrochloric acid provided 10-hydroxy-7 $\alpha$ -methyl-estra-4-ene-3,17-dione (III) and 5,10-dihydroxy-7 $\alpha$ -methyl-estra-4-ene-3,17-dione (IV). III and IV were reacted with concentrated sulfuric acid to afford estra-4,9(10)-diene-3,17-dione I [R1 = Me; R2, R3 = H]. Products of this process are important intermediates in the preparation of biol. active substances.

ST estradienedione steroid prepn norandrosteneone epoxidn; oxidoestradiene dihydroxyestraenedione hydroxyestraenedione prepn

IT Ketals

RL: RCT (Reactant); RACT (Reactant or reagent)

(estra-5(10)-ene-3,17-dione-3,17-bis-ketal derivative; in preparation of estra-4,9(10)-diene steroid derivs.)

IT Acids, reactions

RL: RGT (Reagent); RACT (Reactant or reagent)

(inorg.; in preparation of estra-4,9(10)-diene steroids from 10-hydroxy-estra-4-ene-3,17-dione and 5,10-dihydroxy-estra-4-ene-3,17-

dione steroids)  
IT Epoxidation  
(of estra-5(10)-ene-3,17-dione-3,17-bis-glycol ketal in preparation of  
estra-5(10)-oxido-3,17-dione-3,17-bis-glycol ketal)  
IT Estrogens  
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP  
(Preparation)  
(preparation of estra-4,9(10)-diene steroids from 19-nor-androst-4-ene-3-one  
steroids)  
IT 19-Norsteroids  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of estra-4,9(10)-diene steroids from 19-nor-androst-4-ene-3-one  
steroids)  
IT 13209-45-5P, Estra-4,6-diene-3,17-dione 478156-84-2P 478156-85-3P  
478156-86-4P 478156-87-5P 478156-88-6P 478156-89-7P 478156-91-1P ,  
478156-93-3P 478156-94-4P 478156-96-6P 478242-79-4P  
RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic  
preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of estra-4,9(10)-diene steroids from 19-nor-androst-4-ene-3-one  
steroids)  
IT 5173-46-6P, Estra-4,9-diene-3,17-dione 24130-12-9P 30164-84-2P  
478156-90-0P 478156-92-2P 478156-97-7P  
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP  
(Preparation)  
(preparation of estra-4,9(10)-diene steroids from 19-nor-androst-4-ene-3-one  
steroids)  
IT 734-32-7, 19-Nor-androst-4-ene-3,17-dione 2220-74-8 2503-06-2,  
Estra-5(10),9(11)-diene-3,17-dione 17000-78-1 33585-96-5 139444-50-1  
478156-95-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of estra-4,9(10)-diene steroids from 19-nor-androst-4-ene-3-one  
steroids)  
IT 79-21-0, Peracetic acid 937-14-4, m-Chloroperbenzoic acid 7664-38-2,  
Phosphoric acid, reactions 7664-93-9, Sulfuric acid, reactions  
RL: RGT (Reagent); RACT (Reactant or reagent)  
(preparation of estra-4,9(10)-diene steroids from 19-nor-androst-4-ene-3-one  
steroids)

=> b reg

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STRUCTURE FILE UPDATES: 23 JUN 2005 HIGHEST RN 852898-09-0  
DICTIONARY FILE UPDATES: 23 JUN 2005 HIGHEST RN 852898-09-0

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 18, 2005

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\*  
\* The CA roles and document type information have been removed from \*  
\* the IDE default display format and the ED field has been added, \*  
\* effective March 20, 2005. A new display format, IDERL, is now \*  
\* available and contains the CA role and document type information. \*  
\*

Search done by Noble Jarrell

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Crossover limits have been increased. See HELP CROSSOVER for details.

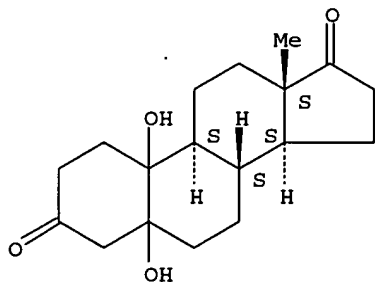
Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:

<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> d ide l3 tot

L3 ANSWER 1 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 478242-79-4 REGISTRY  
ED Entered STN: 07 Jan 2003  
CN Estrane-3,17-dione, 5,10-dihydroxy-, (10 $\xi$ )-(9CI) (CA INDEX NAME)  
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MF C18 H26 O4  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPAT2, USPATFULL

Absolute stereochemistry.

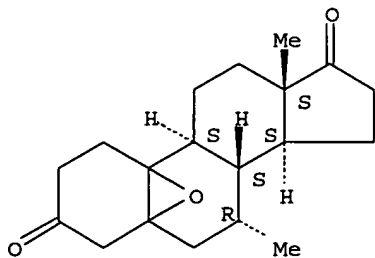


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

- 1 REFERENCES IN FILE CA (1907 TO DATE)
- 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 2 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 478156-97-7 REGISTRY  
ED Entered STN: 06 Jan 2003  
CN Estrane-3,17-dione, 5,10-epoxy-7-methyl-, (7 $\alpha$ ,10 $\xi$ )-(9CI) (CA INDEX NAME)  
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MF C19 H26 O3  
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LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

Absolute stereochemistry.

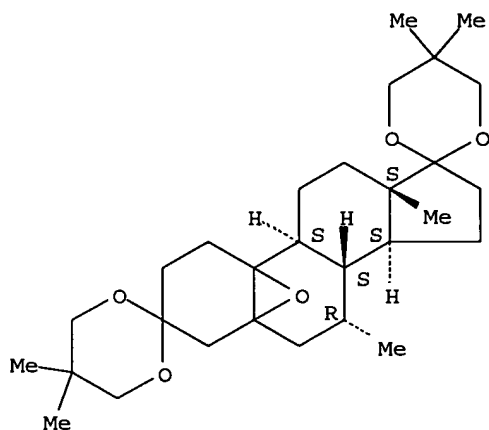


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RN 478156-96-6 REGISTRY  
ED Entered STN: 06 Jan 2003  
CN Estrane-3,17-dione, 5,10-epoxy-7-methyl-, cyclic bis(2,2-dimethyl-1,3-propanediyl acetal), (7 $\alpha$ ,10 $\xi$ )- (9CI) (CA INDEX NAME)  
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SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPAT2, USPATFULL

Absolute stereochemistry.

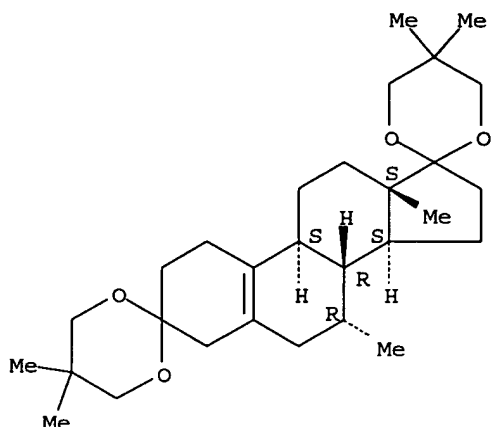


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L3 ANSWER 4 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 478156-95-5 REGISTRY  
ED Entered STN: 06 Jan 2003  
CN Estr-5(10)-ene-3,17-dione, 7-methyl-, cyclic bis(2,2-dimethyl-1,3-propanediyl acetal), (7 $\alpha$ )- (9CI) (CA INDEX NAME)  
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MF C29 H46 O4  
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LC STN Files: CA, CAPLUS, CASREACT, USPAT2, USPATFULL

Absolute stereochemistry.

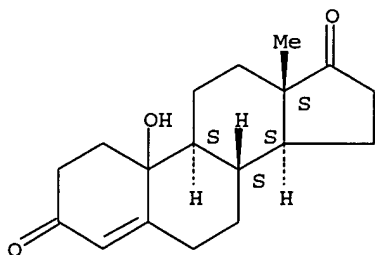


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1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 5 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 478156-94-4 REGISTRY  
ED Entered STN: 06 Jan 2003  
CN Estr-4-ene-3,17-dione, 10-hydroxy-, (10ξ)- (9CI) (CA INDEX NAME)  
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MF C18 H24 O3  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPAT2, USPATFULL

Absolute stereochemistry.

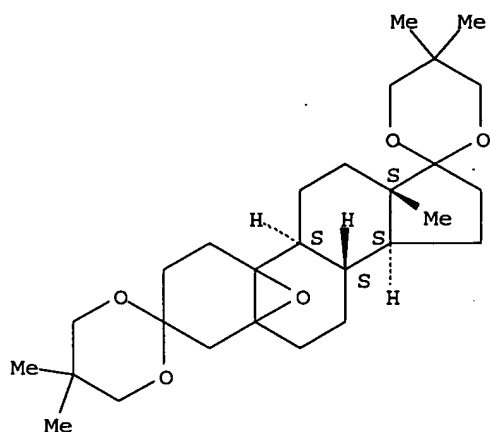


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L3 ANSWER 6 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 478156-93-3 REGISTRY  
ED Entered STN: 06 Jan 2003  
CN Estrane-3,17-dione, 5,10-epoxy-, cyclic bis(2,2-dimethyl-1,3-propanediyl acetal), (10ξ)- (9CI) (CA INDEX NAME)  
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Absolute stereochemistry.

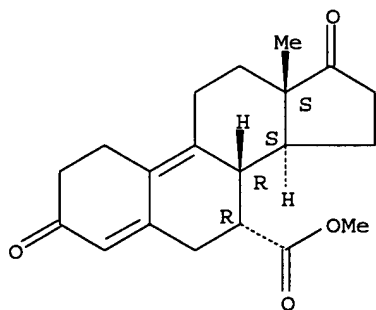


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1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 7 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 478156-92-2 REGISTRY  
ED Entered STN: 06 Jan 2003  
CN Estra-4,9-diene-7-carboxylic acid, 3,17-dioxo-, methyl ester, (7α)-  
(9CI) (CA INDEX NAME)  
FS STEREOSEARCH  
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LC STN Files: CA, CAPLUS, CASREACT, USPAT2, USPATFULL

Absolute stereochemistry.



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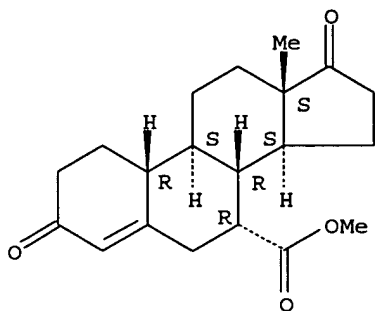
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L3 ANSWER 8 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 478156-91-1 REGISTRY  
ED Entered STN: 06 Jan 2003  
CN Estra-4-ene-7-carboxylic acid, 3,17-dioxo-, methyl ester, (7α)- (9CI)  
(CA INDEX NAME)  
FS STEREOSEARCH  
MF C20 H26 O4  
SR CA

Search done by Noble Jarrell

LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

Absolute stereochemistry.

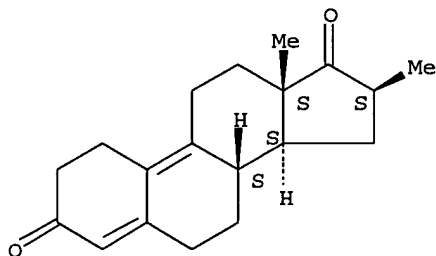


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RN 478156-90-0 REGISTRY  
ED Entered STN: 06 Jan 2003  
CN Estra-4,9-diene-3,17-dione, 16-methyl-, (16β)- (9CI) (CA INDEX NAME)  
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LC STN Files: CA, CAPLUS, USPAT2, USPATFULL

Absolute stereochemistry.



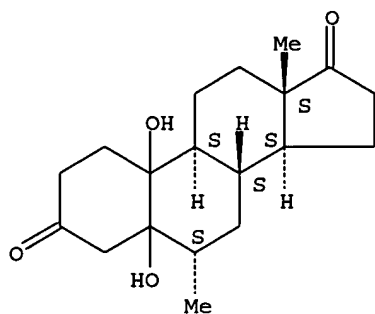
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RN 478156-89-7 REGISTRY  
ED Entered STN: 06 Jan 2003  
CN Estrane-3,17-dione, 5,10-dihydroxy-6-methyl-, (6α,10ξ)- (9CI)  
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Absolute stereochemistry.



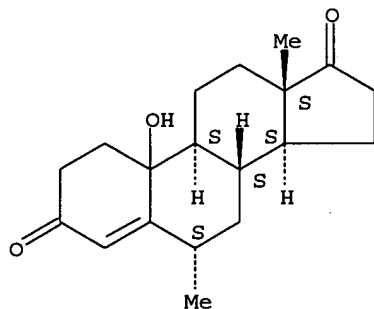


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RN 478156-88-6 REGISTRY  
ED Entered STN: 06 Jan 2003  
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LC STN Files: CA, CAPLUS, CASREACT, USPAT2, USPATFULL

Absolute stereochemistry.

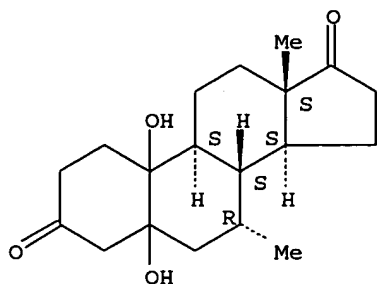


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1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 12 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 478156-87-5 REGISTRY  
ED Entered STN: 06 Jan 2003  
CN Estrane-3,17-dione, 5,10-dihydroxy-7-methyl-, (7 $\alpha$ ,10 $\xi$ )- (9CI)  
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MF C19 H28 O4  
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Absolute stereochemistry.

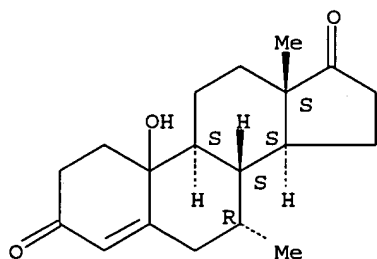


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L3 ANSWER 13 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 478156-86-4 REGISTRY  
ED Entered STN: 06 Jan 2003  
CN Estr-4-ene-3,17-dione, 10-hydroxy-7-methyl-, (7 $\alpha$ ,10 $\xi$ )- (9CI) (CA INDEX NAME)  
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Absolute stereochemistry.

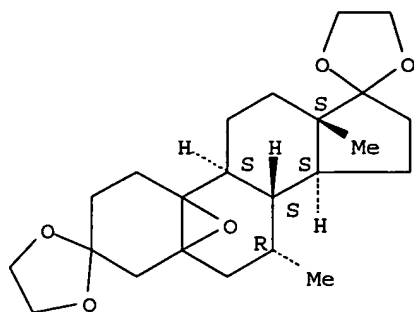


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L3 ANSWER 14 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 478156-85-3 REGISTRY  
ED Entered STN: 06 Jan 2003  
CN Estrane-3,17-dione, 5,10-epoxy-7-methyl-, cyclic bis(1,2-ethanediyl acetal), (7 $\alpha$ ,10 $\xi$ )- (9CI) (CA INDEX NAME)  
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Absolute stereochemistry.

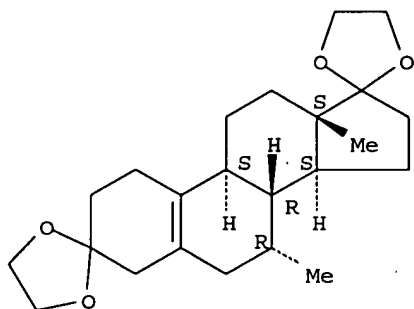


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RN 478156-84-2 REGISTRY  
ED Entered STN: 06 Jan 2003  
CN Estr-5(10)-ene-3,17-dione, 7-methyl-, cyclic bis(1,2-ethanediyl acetal),  
(7α)-(9CI) (CA INDEX NAME)  
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Absolute stereochemistry.

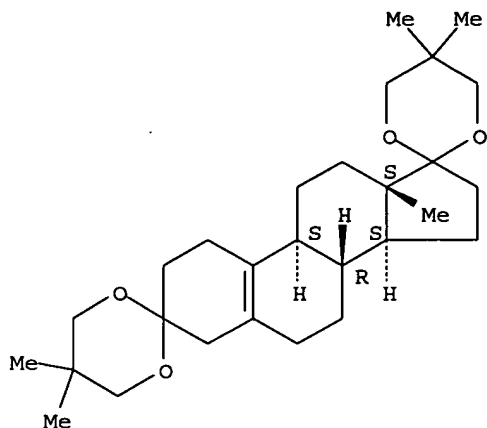


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L3 ANSWER 16 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 139444-50-1 REGISTRY  
ED Entered STN: 06 Mar 1992  
CN Estr-5(10)-ene-3,17-dione, cyclic bis(2,2-dimethyl-1,3-propanediyl acetal)  
(9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Dispiro[1,3-dioxane-2,3'-[3H]cyclopenta[a]phenanthrene-17'(2'H),2''-[1,3]dioxane], estr-5(10)-ene-3,17-dione deriv.  
FS STEREOSEARCH  
MF C28 H44 O4  
SR CA  
LC STN Files: CA, CAPLUS, CASREACT, USPAT2, USPATFULL

Absolute stereochemistry.

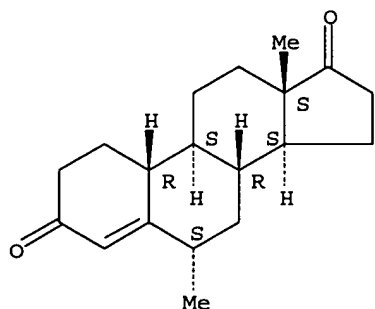


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2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 17 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 33585-96-5 REGISTRY  
ED Entered STN: 16 Nov 1984  
CN Estr-4-ene-3,17-dione, 6-methyl-, (6 $\alpha$ )- (9CI) (CA INDEX NAME)  
OTHER CA INDEX NAMES:  
CN Estr-4-ene-3,17-dione, 6 $\alpha$ -methyl- (6CI, 8CI)  
OTHER NAMES:  
CN NSC 29186  
FS STEREOSEARCH  
MF C19 H26 O2  
LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS, CASREACT, IFICDB, IFIPAT,  
IFIUDB, USPAT2, USPATFULL  
(\*File contains numerically searchable property data)

Absolute stereochemistry.



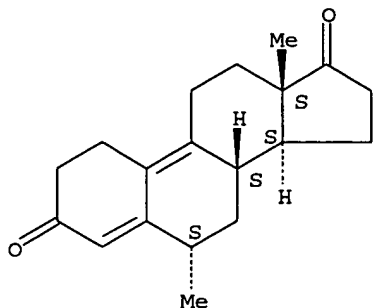
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

4 REFERENCES IN FILE CA (1907 TO DATE)  
4 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

Search done by Noble Jarrell

L3 ANSWER 18 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 30164-84-2 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Estra-4,9-diene-3,17-dione, 6-methyl-, (6 $\alpha$ )- (9CI) (CA INDEX NAME)  
 FS STEREOSEARCH  
 MF C19 H24 O2  
 LC STN Files: CA, CAPLUS, CASREACT, USPAT2, USPATFULL

Absolute stereochemistry.

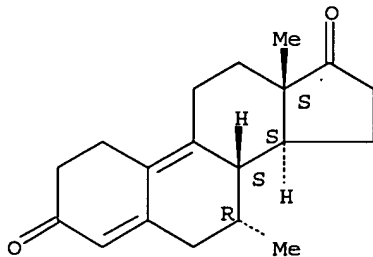


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

1 REFERENCES IN FILE CA (1907 TO DATE)  
 1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 19 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 24130-12-9 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Estra-4,9-diene-3,17-dione, 7-methyl-, (7 $\alpha$ )- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Estra-4,9-diene-3,17-dione, 7 $\alpha$ -methyl- (8CI)  
 FS STEREOSEARCH  
 MF C19 H24 O2  
 LC STN Files: BEILSTEIN\*, CA, CAPLUS, CASREACT, IFICDB, IFIPAT, IFIUDB,  
 TOXCENTER, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)

Absolute stereochemistry. Rotation (-).



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

5 REFERENCES IN FILE CA (1907 TO DATE)  
 5 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L3 ANSWER 20 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 17000-78-1 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Estr-4-ene-3,17-dione, 7-methyl-, (7 $\alpha$ )- (9CI) (CA INDEX NAME)

Search done by Noble Jarrell

## OTHER CA INDEX NAMES:

CN Estr-4-ene-3,17-dione, 7 $\alpha$ -methyl- (7CI, 8CI)

## OTHER NAMES:

CN 7 $\alpha$ -Methylestr-4-ene-3,17-dione

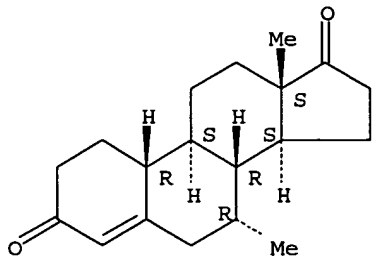
CN SR 16278

FS STEREOSEARCH

MF C19 H26 O2

LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS, CASREACT, IFICDB, IFIPAT,  
 IFIUDB, TOXCENTER, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)

Absolute stereochemistry.



## \*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

15 REFERENCES IN FILE CA (1907 TO DATE)

15 REFERENCES IN FILE CAPLUS (1907 TO DATE)

2 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 21 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN

RN 13209-45-5 REGISTRY

ED Entered STN: 16 Nov 1984

CN Estra-4,6-diene-3,17-dione (7CI, 8CI, 9CI) (CA INDEX NAME)

## OTHER NAMES:

CN 19-Norandrosta-4,6-diene-3,17-dione

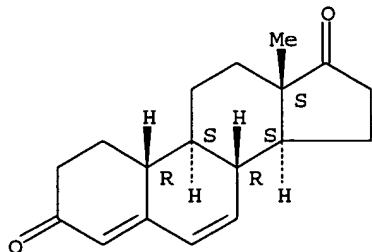
CN 4,6-Estradien-3,17-dione

FS STEREOSEARCH

MF C18 H22 O2

LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS, CASREACT, CSCHEM, IFICDB,  
 IFIPAT, IFIUDB, MEDLINE, TOXCENTER, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)

Absolute stereochemistry.



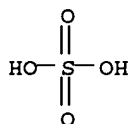
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33 REFERENCES IN FILE CA (1907 TO DATE)

33 REFERENCES IN FILE CAPLUS (1907 TO DATE)

3 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 22 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 7664-93-9 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Sulfuric acid (8CI, 9CI) (CA INDEX NAME)  
 OTHER NAMES:  
 CN BOV  
 CN Brimstone acid  
 CN Contact acid  
 CN Dihydrogen sulfate  
 CN Dipping acid  
 CN NSC 248648  
 CN NSC 38965  
 CN Oil of vitriol  
 CN Ridolene 123  
 CN Sulphuric acid  
 CN Vitriol brown oil  
 FS 3D CONCORD  
 DR 127529-01-5, 119540-51-1, 140623-70-7  
 MF H2 O4 S  
 CI COM  
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO,  
 CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,  
 CHEMINFORMRX, CHEMLIST, CHEMSAFE, CIN, CSCHM, CSNB, DDFU, DETHERM\*,  
 DIPPR\*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2,  
 GMELIN\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*, MSDS-OHS,  
 NIOSHTIC, PDLCOM\*, PIRA, PROMT, RTECS\*, SPECINFO, TOXCENTER, TULSA,  
 ULIDAT, USAN, USPAT2, USPATFULL, VTB  
 (\*File contains numerically searchable property data)  
 Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)

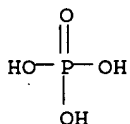


\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

97729 REFERENCES IN FILE CA (1907 TO DATE)  
 4991 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 97787 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 23 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 7664-38-2 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Phosphoric acid (7CI, 8CI, 9CI) (CA INDEX NAME)  
 OTHER NAMES:  
 CN 3M Etching Liquid  
 CN Amberphos 54  
 CN C 134  
 CN C 134 (acid)  
 CN C 434  
 CN C 434 (acid)  
 CN Conditioner 36  
 CN Decon 4512  
 CN E 338  
 CN Etchalite  
 CN EVITs  
 CN HQ 54  
 CN K-etchant  
 CN Kefo

CN Kerr Etchant  
 CN Mikro Klene DF  
 CN NSC 80804  
 CN Orthophosphoric acid  
 CN Panavia Etching Agent  
 CN Sonac  
 CN SPA 2  
 CN SPA 2 (catalyst)  
 CN TG 434  
 CN Total Etch  
 CN Ultra-Etch Gel  
 CN Ultraetch  
 CN Uni-Etch  
 CN WC-Reiniger  
 FS 3D CONCORD  
 DR 28602-75-7, 178560-73-1  
 MF H3 O4 P  
 CI COM  
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BIOBUSINESS, BIOSIS, BIOTECHNO,  
 CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,  
 CHEMINFORMRX, CHEMLIST, CIN, CSCHM, CSNB, DDFU, DETHERM\*, DIOGENES,  
 DIPPR\*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2,  
 GMELIN\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*, MSDS-OHS,  
 NAPRALERT, NIOSHTIC, PDLCOM\*, PIRA, PROMT, RTECS\*, SPECINFO, TOXCENTER,  
 TULSA, ULIDAT, USAN, USPAT2, USPATFULL, VETU, VTB  
 (\*File contains numerically searchable property data)  
 Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)



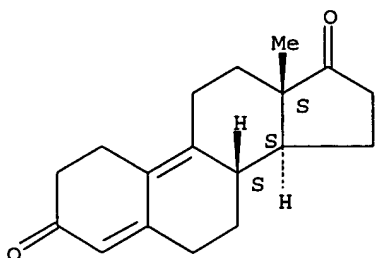
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 8918 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 62459 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 1 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 24 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 5173-46-6 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Estra-4,9-diene-3,17-dione (6CI, 7CI, 8CI, 9CI) (CA INDEX NAME)  
 OTHER NAMES:  
 CN 19-Norandrosta-4,9-diene-3,17-dione  
 FS STEREOSEARCH  
 MF C18 H22 O2  
 LC STN Files: BEILSTEIN\*, BIOSIS, CA, CAOLD, CAPLUS, CASREACT, CHEMCATS,  
 IFICDB, IFIPAT, IFIUDB, PS, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)

Absolute stereochemistry. Rotation (-).





\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

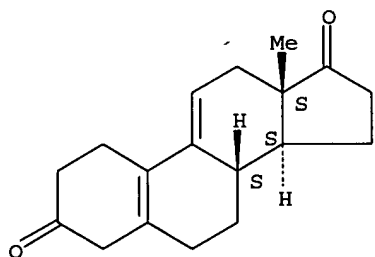
72 REFERENCES IN FILE CA (1907 TO DATE)

72 REFERENCES IN FILE CAPLUS (1907 TO DATE)

12 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 25 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 2503-06-2 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Estr-5(10),9(11)-diene-3,17-dione (7CI, 8CI, 9CI) (CA INDEX NAME)  
 FS STEREOSEARCH  
 MF C18 H22 O2  
 LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS, CASREACT, IFICDB, IFIPAT,  
 IFIUDB, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)

Absolute stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

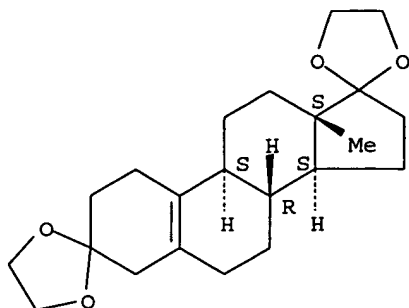
16 REFERENCES IN FILE CA (1907 TO DATE)

16 REFERENCES IN FILE CAPLUS (1907 TO DATE)

4 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 26 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 2220-74-8 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Estr-5(10)-ene-3,17-dione, cyclic bis(1,2-ethanediyl acetal) (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Dispiro[1,3-dioxolane-2,3'-[3H]cyclopenta[a]phenanthrene-17'(2'H),2''-[1,3]dioxolane], estr-5(10)-ene-3,17-dione deriv.  
 CN Estr-5(10)-ene-3,17-dione, cyclic bis(ethylene acetal) (7CI, 8CI)  
 FS STEREOSEARCH  
 MF C22 H32 O4  
 LC STN Files: BEILSTEIN\*, CA, CAOLD, CAPLUS, CASREACT, TOXCENTER, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)

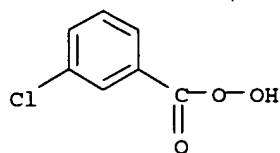
Absolute stereochemistry.



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

7 REFERENCES IN FILE CA (1907 TO DATE)  
 7 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 3 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 27 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 937-14-4 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Benzenecarboperoxoic acid, 3-chloro- (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Peroxybenzoic acid, m-chloro- (7CI, 8CI)  
 OTHER NAMES:  
 CN 3-Chlorobenzenecarboperoxoic acid  
 CN 3-Chloroperbenzoic acid  
 CN 3-Chloroperoxybenzoic acid  
 CN m-Chlorobenzoyl hydroperoxide  
 CN m-Chloroperbenzoic acid  
 CN m-Chloroperoxobenzoic acid  
 CN m-Chloroperoxybenzoic acid  
 CN m-Chloroperoxybenzoic acid  
 CN MCPBA  
 CN NSC 97094  
 FS 3D CONCORD  
 MF C7 H5 Cl O3  
 CI COM  
 LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN\*, BIOBUSINESS, BIOSIS,  
 BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN, CHEMCATS,  
 CHEMINFORMRX, CHEMLIST, CIN, CSCHM, EMBASE, GMELIN\*, HODOC\*, IFICDB,  
 IFIPAT, IFIUDB, IPA, MEDLINE, MSDS-OHS, NIOSHTIC, PS, RTECS\*, SYNTHLINE,  
 TOXCENTER, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)  
 Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)



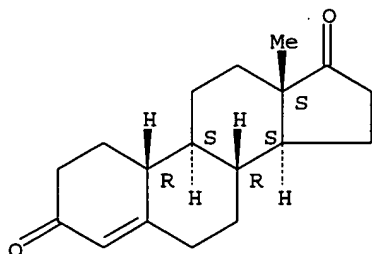
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

Search done by Noble Jarrell

2121 REFERENCES IN FILE CA (1907 TO DATE)  
 43 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 2128 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 19 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 28 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 734-32-7 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Estr-4-ene-3,17-dione (6CI, 8CI, 9CI) (CA INDEX NAME)  
 OTHER NAMES:  
 CN (+)-19-Norandrost-4-en-3,17-dione  
 CN (+)-19-Norandrost-4-ene-3,17-dione  
 CN (+)-Estr-4-ene-3,17-dione  
 CN  $\Delta^4$ -Estrene-3,17-dione  
 CN 19-Nor-4-androstenedione  
 CN 19-Norandrost-4-ene-3,17-dione  
 CN 3,17-Dioxo-19-norandrost-4-ene  
 CN d-19-Norandrost-4-ene-3,17-dione  
 CN NSC 12164  
 FS STEREOSEARCH  
 DR 15324-53-5, 30598-83-5  
 MF C18 H24 O2  
 LC STN Files: AGRICOLA, ANABSTR, BEILSTEIN\*, BIOBUSINESS, BIOSIS,  
 BIOTECHNO, CA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CHEMCATS,  
 CHEMINFORMRX, CHEMLIST, CSCHEM, EMBASE, IFICDB, IFIPAT, IFIUDB, IPA,  
 MEDLINE, PS, SPECINFO, TOXCENTER, USPAT2, USPATFULL  
 (\*File contains numerically searchable property data)  
 Other Sources: EINECS\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)

Absolute stereochemistry.



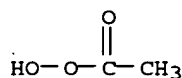
\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

410 REFERENCES IN FILE CA (1907 TO DATE)  
 4 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 411 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 32 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

L3 ANSWER 29 OF 29 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 79-21-0 REGISTRY  
 ED Entered STN: 16 Nov 1984  
 CN Ethaneperoxoic acid (9CI) (CA INDEX NAME)  
 OTHER CA INDEX NAMES:  
 CN Peroxyacetic acid (8CI)  
 OTHER NAMES:  
 CN Acetic peroxide  
 CN Acetyl hydroperoxide  
 CN Desoxon 1  
 CN Estosteril  
 CN Hydroperoxide, acetyl

Search done by Noble Jarrell

CN LCAP  
 CN Monoperacetic acid  
 CN Osbon AC  
 CN Oxigreen 010  
 CN Oxypel  
 CN Ozonit  
 CN Peracetic acid  
 CN Perethanoic acid  
 CN Peroxoacetic acid  
 CN Proxitane 12A  
 CN Proxitane 15  
 CN Proxitane 1507  
 CN Proxitane 4002  
 CN Proxitane S  
 CN Tsunami  
 CN Tsunami 100  
 FS 3D CONCORD  
 DR 89370-71-8, 232259-02-8  
 MF C2 H4 O3  
 CI COM  
 LC STN Files: AGRICOLA, ANABSTR, AQUIRE, BEILSTEIN\*, BIOBUSINESS, BIOSIS,  
 BIOTECHNO, CA, CABA, CANCERLIT, CAOLD, CAPLUS, CASREACT, CBNB, CEN,  
 CHEMCATS, CHEMINFORMRX, CHEMLIST, CIN, CSCHEM, CSNB, DDFU, DETHERM\*,  
 DIPPR\*, DRUGU, EMBASE, ENCOMPLIT, ENCOMPLIT2, ENCOMPPAT, ENCOMPPAT2,  
 GMELIN\*, HODOC\*, HSDB\*, IFICDB, IFIPAT, IFIUDB, IPA, MEDLINE, MRCK\*,  
 MSDS-OHS, NIOSHTIC, PDLCOM\*, PIRA, PROMT, PS, RTECS\*, SYNTHLINE,  
 TOXCENTER, TULSA, ULIDAT, USPAT2, USPATFULL, VETU, VTB  
 (\*File contains numerically searchable property data)  
 Other Sources: DSL\*\*, EINECS\*\*, TSCA\*\*  
 (\*\*Enter CHEMLIST File for up-to-date regulatory information)



\*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

3979 REFERENCES IN FILE CA (1907 TO DATE)  
 62 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
 3985 REFERENCES IN FILE CAPLUS (1907 TO DATE)  
 6 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

=> b wpix

FILE 'WPIX' ENTERED AT 15:38:56 ON 24 JUN 2005  
 COPYRIGHT (C) 2005 THE THOMSON CORPORATION

FILE LAST UPDATED: 21 JUN 2005 <20050621/UP>  
 MOST RECENT DERWENT UPDATE: 200539 <200539/DW>  
 DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> FOR A COPY OF THE DERWENT WORLD PATENTS INDEX STN USER GUIDE,  
 PLEASE VISIT:  
[http://www.stn-international.de/training\\_center/patents/stn\\_guide.pdf](http://www.stn-international.de/training_center/patents/stn_guide.pdf) <<<

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES, SEE  
<http://thomsonderwent.com/coverage/latestupdates/> <<<

>>> FOR INFORMATION ON ALL DERWENT WORLD PATENTS INDEX USER  
 GUIDES, PLEASE VISIT:  
<http://thomsonderwent.com/support/userguides/> <<<

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DOCUMENTATION NOW AVAILABLE IN DERWENT WORLD PATENTS INDEX  
FIRST VIEW - FILE WPIFV.  
FOR FURTHER DETAILS: <http://www.thomsonderwent.com/dwpifv> <<<

>>> THE CPI AND EPI MANUAL CODES HAVE BEEN REVISED FROM UPDATE 200501.  
PLEASE CHECK:  
<http://thomsonderwent.com/support/dwpiref/reftools/classification/code-revision/>  
FOR DETAILS. <<<

=> d all 14 tot

L4 ANSWER 1 OF 1 WPIX COPYRIGHT 2005 THE THOMSON CORP on STN  
AN 2003-278225 [27] WPIX  
DNC C2003-072590  
TI Preparation of steroid with 4,9(10)-diene-3-one, or its derivative,  
comprising contacting 10-hydroxy-4-ene-3-ketosteroids and  
5,10-dihydroxy-3-ketosteroids with concentrated or moderate sulfuric acid.  
DC B01  
IN HESSLER, E J; RHEENEN, V H V; VAN RHEENEN, V H  
PA (HESS-I) HESSLER E J; (RHEE-I) RHEENEN V H V; (VRHE-I) VAN RHEENEN V H;  
(BRID-N) BRIDGE ORGANICS CO  
CYC 100  
PI WO 2002101014 A2 20021219 (200327)\* EN 12 C12N000-00  
RW: AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ  
NL OA PT SD SE SL SZ TR TZ UG ZM ZW  
W: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK  
DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR  
KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT  
RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VN YU ZA ZM ZW  
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AU 2002316205 A1 20021223 (200452) C12N000-00  
US 6812358 B2 20041102 (200472) C07J001-00 <--  
ADT WO 2002101014 A2 WO 2002-US18305 20020607; US 2003004333 A1  
Provisional US 2001-296999P 20010608, US 2002-163727 20020606; US  
2004087785 A1 Provisional US 2001-296999P 20010608, Div ex US  
2002-163727 20020606, US 2003-695122 20031028; AU 2002316205 A1 AU  
2002-316205 20020607; US 6812358 B2 Provisional US 2001-296999P  
20010608, US 2002-163727 20020606  
FDT AU 2002316205 A1 Based on WO 2002101014  
PRAI US 2002-163727 20020606; US 2001-296999P  
20010608; US 2003-695122 20031028  
IC ICM C07J001-00; C07J021-00; C07J071-00; C12N000-00  
ICS A61K031-56; A61K031-58; C07D223-14; C07J053-00  
AB WO2002101014 A UPAB: 20030429  
NOVELTY - Preparation (P1) of steroid (I) with 4,9(10)-diene-3-one, or its  
derivative, comprises contacting 10-hydroxy-4-ene-3-ketosteroids and/or  
5,10-dihydroxy-3-ketosteroids with concentrated or moderated sulfuric acid  
(up to 5 volume%) (containing mixture of concentrated sulfuric acid (30  
volume%) and water).  
DETAILED DESCRIPTION - Preparation (P1) of steroid of formula (I)  
with 4,9(10)-diene-3-one, or its derivative, comprising contacting  
10-hydroxy-4-ene-3-ketosteroids of formula (II) and/or  
5,10-dihydroxy-3-ketosteroids of formula (III) with concentrated or  
moderated sulfuric acid (up to 5 volume%) (containing mixture of  
concentrated sulfuric acid (30 volume%) and water).  
R1 = CH3, H or COOCH3; and  
R2 = CH3, F or H.  
INDEPENDENT CLAIMS are also included for the following:  
(1) compounds of formulae (V), (VI), (VII) and (VIII); and  
(2) preparation (P2) of steroidal estra-4,9(10)-diene-3,17-diones of  
formula (IA), comprising either:  
(a) (i) contacting estra-5(10)-ene-3,17-bis-ketal of formula (IB)  
with an epoxidizing agent, (ii) contacting the epoxide product with dilute

acid, and (iii) contacting the obtained product with concentrated or moderated sulfuric acid; or

(b) treating steroidal ester-5(10),9(11)-diene-3,17-diones of formula (IX) with concentrated mineral acid.

R3 = CH3, OH, F or H; and

X = C, C(CH3)2 or CH2.

USE - For the preparation of a steroid having 4,9(10)-diene-3-one, or its derivative (claimed), as intermediates in the preparation of biologically active substance.

Dwg.0/0

FS CPI

FA AB; GI; DCN

MC CPI: B01-C09; B01-D02

=> b home

FILE 'HOME' ENTERED AT 15:39:01 ON 24 JUN 2005

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